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IN THE

Supreme Court of the United States

October Term, 1951

No. 703

STUART LABORATORIES, INC. and WILLIAM B. HUGLE,
Petitioners,

—against—

UNION CARBIDE AND CARBON CORPORATION,
Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

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April 10, 1952.

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To The Honorable the Chief Justice of the United States and the Associate Justices of the Supreme Court of the United States:

Petitioners above-named respectfully pray that a writ of certiorari be issued to review and reverse the judgment of the Court of Appeals for the Third Circuit (No. 10546 in the said Court), which affirmed a judgment of the United States District Court for the District of New Jersey which held valid and infringed all of the nineteen claims of a patent owned by the respondent.

OPINIONS BELOW

The opinion of the District Court is reported in 97 Fed. Supp. 213. The opinion of the Court of Appeals is not yet reported.

JURISDICTION

The judgment of the Court of Appeals was entered on February 20, 1952. Petition for rehearing was denied March 18, 1952. The jurisdiction of this Court is invoked under Secs. 1254 and 2101 of the Revised Judicial Code of June 25, 1948, C. 646, 62 Stat. 928, 961; 28 U. S. C. A., Secs. 1254 and 2101.

QUESTIONS PRESENTED

1. When applicants for a patent on a process claimed to produce a salable product have deliberately omitted from their disclosure a procedure which admittedly will "tremendously increase the yield" of the product and improve the quality thereof, is the disclosure sufficient?

2. When applicants for a patent on a process claimed to produce a salable product concede that they have deliberately omitted from their disclosure, and have claimed as a trade secret, a procedure which they admit must be used commercially, and that they have used continuously in commercial operations from a time prior to the filing date of the patent, and must use in order to make money, is the disclosure sufficient?

3. May such a patent be enforced when the monopoly of the patent has been combined with trade secrets claimed by the patentee, and which are essential to commercial operations?

4. Does one infringe, who applies only the omitted procedure of question number one, which is admittedly old, to the treatment of a particular composition of matter, recommended but not specified as critical in the disclosure, and composed of the same ingredients in substantially the same proportions as used by others for many years prior to the application for the patent?

STATEMENT

Respondent Union Carbide and Carbon Corporation (hereinafter sometimes called "Union Carbide") sued petitioners in the United States District Court for the District of New Jersey, alleging infringement of a patent owned by respondent, containing 19 claims, some process and some product (P. Ex. 1, P. App.). All were held valid and infringed. The Court of Appeals for the Third Circuit affirmed the judgment without modification.

In a second cause of action respondent asked an injunction against an alleged appropriation of trade secrets, most of which were concededly known on the filing date and claimed as trade secrets because useful in improving the efficiency of the process (Tr. 528-9, 687, original transcript, 432-3, 421-3, 426, 644-6, and citations given in discussion of 90° orientation, *post*), but were not disclosed in the patent. This second cause of action was tried, but has not been passed upon.

Petitioners have a counterclaim pending based upon the claim that respondent drove them out of business and bankrupted them by infringement notices to their distributors and a suit against their main distributor, actions alleged to have been taken by respondent with knowledge or good reason to know that its patent was invalid for insufficient disclosure.

(a) The Facts

The patent discloses a process by means of which it is claimed that *gem quality* star rubies and sapphires (P. Ex. 1, Cls. 8-15, 19) can be produced. These products are likewise claimed as inventive.

As originally filed, the application sought to obtain a patent for star rubies and sapphires, displaying asteriation, without specifying that the products must be of gem quality. In the course of the prosecution of the application, the product claims were limited by the use of the phrase "gem quality, *i.e.*, to claim salable star stones.

Respondent's exclusive distributor testified flatly that this restriction excluded all star stones in which the six-rayed star was incomplete or eccentrically located, *i.e.*, not properly centered (Tr. 910-913, Dfs'. Ex. 25, D. App.). *Salable* star rubies and star sapphires were apparently novel at the time the patent was applied for. The evidence was in conflict as to the existence, prior to the application for the patent in suit, of asteriated corundum stones. It was not disputed that asteriated stones of the related material, spinel, were then known (Dfs'. Ex. 90, Tr. 1604). *Petitioners are found to have infringed through employing a heating process which both Courts below explicitly held to be old* (Opinion, Ct. of Appeals, p. 6). This heating process was applied to a composition of matter *recommended but not specified as critical in the disclosure,* and which varied but little in the proportion of ingredients from a composition of matter which was standard in the art (P. Ex. 1, col. 2, line 49; P. Ex. 5, p. 2, line 8, P. App.)

In view of the foregoing, the question which immediately arises is how a novel product could be produced by the application of the old process to an old composition of

matter. The answer, we contend, lies in a completely insufficient disclosure with relation to the process.

The description contained in the next two paragraphs of the basic process, can not be disputed:

Since the early part of the 20th Century, colored boules (carrot-shaped) of corundum (fused alumina or aluminum oxide) had been made according to the so-called Verneuil process, the subject of two United States patents taken out at that time (P. Exs. 5 and 6, P. App.). This process, in brief, consists of tapping powdered aluminum oxide, containing a very small amount of a colorant such as titanium dioxide (Ti02), through a sieve on to a refractory support and playing an oxyhydrogen flame thereon. This melts the aluminum oxide, and, as the support is gradually lowered, a carrot-shaped boule is built up. The temperature of this oxyhydrogen flame is around 2000° C.

The boule consists of a single crystal. The direction in which it grows, to wit, upwards, is called the growth axis. The main crystallographic axis of the crystal which may be conceived of as being like a hexagonal steel bar with hexagonal pyramids at both ends, is known as the C-axis. The relation between these two axes is known as the orientation of the crystal. In other words, if the axes are at right angles, there would be a 90° orientation. If they coincide, there would be a 0° orientation.

All corundum boules, if jarred or tapped, will split along the plane defined by the growth axis and the C-axis, into half-boules (P. Ex. 73, p. 513; D. Ex. 97, p. 401). Up until the time of the advent of the star stone, corundum half-boules were regularly employed for the production of corundum crystals used as bearings in industry.

The star boule, however, is another matter. As explicitly pointed out (Col. 3, lines 10-22) in the patent, it has a *skin* in which the titanium dioxide, which is the star-producing material, is concentrated. Where the skin stops the star stops (D. Ex. 18, D. App., p. 453). Only a very small amount of this titanium dioxide is used. The patent suggests, *but it does not specify* as critical in the disclosure, from one-tenth to three-tenths of one per cent (Col. 2, lines 49-53) *for best results.* In Verneuil's patents, he specifies five-tenths of one per cent of titanium dioxide for the making of a blue boule (P. Exs. 5 and 6). Thus, alumina powders containing a few tenths of one per cent of titanium dioxide were standard in the Verneuil practice. The difference between .3 of 1% and .5 of 1% is of no consequence because in the heating some at least of the Ti02 admittedly burns out and what remains in the boule after the heating is the important thing (Tr. 501-3, 544-6).

In making star boules, it is essential to prevent them from splitting in half, although there is not a word in the patent to this effect. The reason is that nothing but a partial and eccentrically located star can be obtained from a half-boule, and this, as we have shown, is concededly unsalable.

The models in evidence (D. Exs. 31, 34, 43, 44 and 40) exhibit and demonstrate the simple geometry of the situation, *i.e.*, that, with the skin boules of the patent, it is impossible to get the skin in the right place so as to have a complete six-rayed centered star, when using a half-boule. The patent prescribes that the stone must be so cut that its base is parallel to the C-axis. This places the skin in the base or crown of the stone where it must be, as the patent notes (P. Ex. 1, Col. 3, lines 23-31).

Boules can be prevented from splitting by annealing them, that is, heating them somewhat short of the melting temperature of alumina, which is 2000°C., that is around 1800°C. So well did the respondent know this that it had applied for a patent on annealing plain corundum boules, long before it filed the application for the patent in suit (D. Ex. 99, D. App.).

By the use of a small corundum crystal of known orientation, which is called a seed, the orientation of the boule being grown can be controlled. Unless 90° orientation is obtained in a boule, as the above-mentioned models demonstrate as a matter of simple geometry, the star is found to be incomplete and eccentrically located, *i.e., not* centered, thus making the stone unsalable, as before noted.

With the refractory or ceramic support which is specified in the patent, boules admittedly tend to have an orientation around 60°, the orientation not being predictable unless a seed is used. All sorts of orientations are thus obtained when no seed is used. It is possible, of course, that one might be lucky enough to obtain a 90° oriented boule without the use of a seed, but this would be a matter of pure chance (Tr. 785, original transcript, 1455).

Respondent knew all about the importance of seeding because it had filed a patent application therefor long before filing for the patent in suit (D. Ex. 100, D. App.).

Despite their obvious importance, then well-known to respondent, the patent makes no mention of either the annealing or 90° orientation techniques.

A year or two after its application for the patent in suit was filed, respondent discovered a method (Tr. 1204-5, 118, original transcript, 801-2, 1294-7, 556, 568-9, 634-6,

854) by which it could distribute titanium dioxide throughout the boule, as distinguished from having it concentrated in the skin, *the latter being the only kind of boule described in the patent.* This method was called pressure variation, and plaintiff applied for a patent thereon, as stated by counsel during the trial (original transcript, p. 571). Unquestionably, if one uses pressure variation, there is no necessity of annealing the boule or employing 90° orientation. This, however, in no way aids respondent in upholding the validity of the patent in suit.

When the sufficiency of its disclosure was questioned at the trial, respondent refused several formal offers of laboratory facilities (original transcript, 1045-7, 1472) to demonstrate that its patent would work in producing star stones of gem quality. Instead, it chose to rely upon the testimony of its employees that the patent would work, not even producing any records of tests made prior to the commencement of its infringement suit to establish this. Shortly prior to the trial, it conducted some tests, using a very special type of burner (D. Ex. 110, D. App) which our witnesses testified produced an effect similar to that of pressure variation (Tr. 1665). The star stones obtained in this carefully rigged test were very poor specimens, cracked and obviously unsalable. This exhibit may be compared with the stones which respondent regularly sells, and the Court will see clearly that these are miserable specimens, full of cracks which are revealed by a magnifying glass if not the naked eye (compare P. Exs. 22 and 2 with P. Ex. 64). As a caveat, we point out that the photograph of these specimens (P. Ex. 65, P. App) is very successful in concealing these defects.

The Swiss have practiced the Verneuil procedure for nearly half a century and are admittedly highly skilled

therein. A representative of one of the leading Swiss companies, "Djeva", testified flatly that the patent was unworkable (Tr. 1350-4, 1357-8, 1380-3, original transcript, 1388, 1367-8). Defendants spent $75,000.00 and took a year to make salable star stones, although they knew at first hand the process outlined in the patent (Tr. 1632-3).

There are plainly vital omissions from respondent's patent, essential to commercial success, even if it be assumed (contrary to our contention) that the process will barely succeed in producing stones with a star in them. For present purposes, we confine ourselves to the two outstanding omissions from respondent's patent, annealing and 90° orientation, although respondent claims at least a score of other trade secrets (D. Ex. 63, D. App.) auxiliary to the patent. These two techniques are, in fact, the gist of respondent's discovery. Through them, and them alone, it has been able to make commercially "gem quality" star stones from boules having a "skin", as described in its patent.

Annealing

Respondent's expert, Burdick, a full-time employee, and one of the two joint applicants for the patent, testified unequivocally that annealing was "very important commercially" since it would *"increase tremendously the yield of stones per boule"* and "improve the quality" (Tr. 112-113).

The advantages of annealing were admittedly well-known to the applicants at the time the application for patent was filed (August 27, 1947), since Rehm, respondent's employee in charge of its boule-growing since 1946, testified that they had annealed their star boule as long as he had been there (original transcript, 505, 525). Burdick

testified that it was respondent's practice to anneal in 1946 (Tr. 119). Rehm said that at the time the patent application was filed, they annealed nearly all of their star boules (Tr. 593). Today they anneal 100 per cent of their star boules in commercial production, as Burdick categorically admitted (Tr. 116-117). An idea record of Burdick's dated January 13, 1947 (D. Ex. 93, D. App.) categorically stated that it was necessary to use annealed boule for best results.

90° Orientation

Rehm testified that in respondent's commercial production in 1947 and 1948 it "almost invariably" used 90° orientation (Tr. 562, 590-1). Burdick testified "if we make money on it, it will be because we orient it" (Tr. 115) .

In the pre-application notebook (D. Ex. 106) of Glenn (a co-applicant) it is noted that boules not grown at 90° orientation are "no good". Burdick recognized this fully in his idea record of January 13, 1947 (six months before the patent application), when he said that skin boules "should be grown with a 90° C-axis", and gave the same reason we have given (D. Ex. 92, D. App.). In a patent memorandum (D. Ex. 24, D. App.) on page 2, the patent applicants in January, 1947, said "we prefer to grow boules where the C-axis is at 90° to the growth axis".

REASONS FOR GRANTING THE WRIT

(a) Insufficiency of Disclosure (Questions Nos. 1 and 2).

The basic requirement of U. S. R. S. 4888 (Sec. 33 of Title 35, U. S. C.) is that the disclosure must describe the invention in such "*full*, clear, concise and exact terms" as to enable any person skilled in the art to practice the invention.

Nothing, assuredly, can be more fundamental to the patent system than the proposition that the patentee, in

return for the 17-year monopoly accorded him, must disclose all that is essential to permit the public to effectively compete with him after the expiration of the monopoly. Certainly no such competition is possible if the patentee has held back elements essential to commercial success, assuming the patent is barely operative without them.

If such patentee is unable to disclose more that he does, and hence presents only a crudely operating device, he has, of course, done his duty. Telephone Cases, 126 U. S. 1; *Hildreth* v. *Mastoras,* 257 U. S. 27.

Per contra, however, if he knows how to make his patent work well and produce a large yield of quality product, yet tells only enough to get a low yield of a poor product.

The District Court, just prior to discussing infringement in its opinion, definitely held that annealing and 90° orientation were improvements. They were admittedly known and habitually used commercially by respondent prior to the time of the application for the patent in suit, as above shown. Their great value is admitted.

On page 8 of its opinion, the Court says:

> "Defendants argue, alternatively that even if annealing and 90° orientation are not vitally essential to the production of gem quality stones, they are nevertheless highly important steps and result in greatly increased productive efficiency. Defendants urge that full disclosure under R. S. §4888 means not merely the revealing of bare essentials but the disclosure by the patentee of the best methods then known to him. See *Stelos Co.* v. *Hosiery Motor-Mend Corp.,* 60 Fed. 2d 1009, 1011 (D. C. N. Y., 1932). Footnote 5. *But see Sewall* v. *Jones,* 91 U. S. 171, 185-186 (1875)."

An exhaustive search of the cases has turned up no clearly authoritative American case decisive of the conflict thus indicated by the Court of Appeals.

This Court's decision in *Sewall* v. *Jones*, 91 U. S. 171, 185-6 (1875) contains a flat statement as follows:

> "The principle is this: the omission to mention in the specification something which contributes only to the degree of benefit, providing the apparatus would work beneficially and be worth adopting without it, is not fatal, while the omission of what is known to be necessary to the enjoyment of the invention is fatal."

While this appears to be dictum because the best method was explicitly recommended in the specification, and the question was whether one infringed who did not use the recommended (but unspecified) method, the Court of Appeals evidently felt it to be the law. Otherwise it could not have reached the result it did in view of the clear admissions of respondent and its commercial usage. Between this situation and our case, moreover, there is the difference that the most that can be assumed of our patent is that it is barely operative, but is not worth adopting without the omitted elements.

Apparently opposed to this dictum in *Sewall* v. *Jones*, *supra*, are *Rohm* v. *Martin Dennis Co.*, 263 Fed. 388 (C. C. A. 3rd, 1920) and *Featheredge Rubber Co.* v. *Miller Rubber Co.*, 259 Fed. 2d 565 (C. C. A. 6th, 1919).

Since this Court has been applying stricter standards to patent validity, the temptation to omit essential elements from patent disclosures, and to claim them, if possible, as trade secrets, has plainly increased. In this way, through what is known in patent circles as "know-how",

one can eat one's cake and have it too, *i.e.*, can have a patent monopoly for 17 years, and, after the expiration thereof, be free for an indefinite period from effective competition. In this case, for example, orientation control and 90° orientation were claimed as trade secrets (D. Ex. 63, items 22 and 23) and not disclosed in the patent, though clearly essential for a competitor to know about. Nothing in the patent law, we submit, can be more vital than the principle for which we contend.

On a matter of this great importance, therefore, it is respectfully submitted that this Court should lay down the law clearly and emphatically, so that it cannot be contended in the future that there is any doubt about the principle. It has, so far as we can ascertain, not heretofore done so.

The law as we contend it should be is exemplified by the following cases:

In *Stelos Co.* v. *Hosiery Motor-Mend Corporation*, 60 Fed. (2d) 1009 at page 1011 (S. D. N. Y.), Judge Woolsey, in holding a patent invalid *inter alia* for insufficient disclosure, referred to a number of English cases contained in 1 Webster Patent Cases to support the self-evident proposition that applicant for a patent cannot hold back anything advantageous which he knows. He quotes Baron Alderson in *Morgan* v. *Seaward*, 1 Webster 170, 174 as saying:

> "If a patentee is acquainted with any particular mode by which his invention may be most conveniently carried into effect, he ought to state it in his specifications."

Four other cases from the same publication, which is a collection of English patent cases from 1601 to 1843, are cited by Judge Woolsey for the proposition that

> "*The public is entitled to all the knowledge which the inventor has in regard to his invention,* and if a process can be achieved both by an expensive and a cheap element, the patentee must disclose the cheap element as well as the expensive element, *so that the public may have the same advantage after his monopoly ceases as the patentee had during the monopoly period. Turner* v. *Winter,* 1 Webster 77, 81; *Wood* v. *Zimmer,* 1 Webster 82; *Savory* v. *Price,* 1 Webster 83; *Sturtz* v. *De la Rue,* 1 Webster 83."

In *Turner* v. *Winter, supra,* at page 81, the court said:

> "So if he make the article for which the patent is granted with cheaper materials than those which he has enumerated, although the latter will answer the purpose equally well, the patent is void, because he does not put the public in possession of his invention, or enable them to derive the same benefit which he himself does."

At page 82 it said:

> "In a case before Lord Mansfield (*ante,* 53), for infringing a patent for steel trusses, it appeared that the patentees, in tempering the steel, rubbed it with tallow, *which was of some use in the operation;* and because this was omitted, the specification was held to be insufficient, and the patent was avoided." (Emphasis ours.)

Wood v. *Zimmer,* 1 Webster 82, was an action to try the validity of Zinck's patent for "a method of making verdigris". It appeared that the method described in the specification was sufficient to make the verdigris; but that Zinck had been accustomed clandestinely to put *aqua*

fortis into the boiler whereby one of the ingredients, copper, was dissolved more rapidly; but the verdigris so produced was neither better nor cheaper than that made according to the specification. The Court said:

> "It is said that the method described makes verdigris and that the specification is therefore sufficient."

The law is not so: a man who applies for a patent who possesses a mode for carrying on that invention in the most beneficial manner, must disclose the means of producing it in equal perfection, and with as little expense and labor as it costs the inventor himself. The price that he pays for the patent is, that he will enable the public at the expiration of the privilege to make it in the same way and with the same advantages. If anything that gives an advantageous operation to the invention be concealed, the specification is void. Now, though the specification should enable a person to make verdigris substantially as good without *aqua fortis* as with it, still, inasmuch as it would be made with more labor by the omission of *aqua fortis*, it is a prejudicial concealment, and a breach of the terms which the patentee made with the public.

In *Savory* v. *Price*, 1 Webster 83, the Court said:

> "It is the duty of a patentee to specify the plainest and most easy way of producing that for which the patent is granted, and to make the public acquainted with the mode which he himself adopts. By reading the specification, we are led to suppose a laborious process necessary to the production of the ingredients, when in fact, one might go to any chemist's shop and buy the things ready made. The public are misled by the specification, which tends to make people believe that an elaborate process is essential to the invention; it cannot be supported."

Examination of Mew's Digest of English Case Law through 1950 makes it clear that no recent cases throw any doubt on the foregoing still being the law.

(b) Question No. 3.

This Question is closely connected with *Question No. 2.* The effect of tying a patent monopoly to trade secrets of large importance to successful commercial operation, is to prevent effective competition with the patentee after the patent has expired, and thus to bring about a failure of the consideration for which the patent was granted.

So far as we have been able to ascertain, no court, including this one, has ever clearly decided that a patent owner, thus protected *in perpetuo* from effective competition, may enforce his patent. We submit that he ought not to be allowed to do so, on the authority of *Mercoid Corp.* v. *Minneapolis Honeywell Regulator Co.,* 320 U. S. 680; *Morton Salt Co.* v. *Suppiger Co.,* 314 U. S. 488; *B. B. Chemical Co.* v. *Ellis,* 314 U. S. 495; *Mercoid Corp.* v. *Mid-Continent Invest Co.,* 320 U. S. 661.

(c) Question No. 4—Infringement.

We raise this question because we believe that it is sufficiently important, in connection with the law respecting patents on the combination of old elements, to warrant this Court, in the exercise of its supervisory power over the lower courts, to reverse a palpably erroneous holding which may be wrongly taken as pointing the way to the validation of many invalid patents.

On the infringement issue the District Court found that if annealing, found by it to be old, was practiced, it could not as a practical matter be practiced in any other way than petitioners did, *i.e.,* that the cooling through the range

prescribed in the patent, and remaining therein for a number of hours, was inevitable (Finding of Fact 28).

It follows that infringement must be predicated upon a combination of annealing with a particular composition of matter. Respondent seeks to set up such a combination by referring to "critical amounts" of titania. Unfortunately for it, no critical amounts have been specified. All that the disclosure contains is a *recommendation* (col. 2, lines 49-53). As held in *Sewall* v. *Jones*, 91 U. S. 171, 186, this is not part of the specification. We submit, therefore, that a patent predicated on such a combination is invalid.

CONCLUSION

It is respectfully prayed that this petition for a writ of certiorari be granted.

Dated: April 10, 1952.

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